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December 20, 1901

## LIVERPOOL, ENGLAND, December 7, 1901.

SIR: I have the honor to report that for the week ended December 7 the health of Liverpool was better than usual; the rate is 28, an annual rate of 20 per 1,000. No case of any quarantinable disease was reported during the week. The sanitary crusade inaugurated at the appearance of the recent outbreak of plague has been continued, and the good results are apparent in the greater cleanliness of the city. A war is also being waged on the rats, and all sick rats caught or any found dead are examined for plague, with a negative result so far. It is claimed that there has been no increased mortality among the rats. I have been informed by the health officer of Liverpool that if the plague were to recur here, it is the intention of the city authorities to again put on the inspection of outgoing vessels. This inspection was done by a force of 6 physicians employed by the city. All passenger ships were required to have this inspection of crew and steerage passengers; freight vessels were given it on request, and many asked it. The glandular regions of crew and steerage were examined. If any persons showed symptoms of fever, their temperature was taken, and if fever was found they were detained. Acting Assistant Surgeon Thomas, who witnessed some of these inspections, told me that he regarded them as very thorough.

The smallpox in London seems to be assuming the nature of an epidemic. On Wednesday, the 4th, there were remaining in hospitals in that city 491 cases. Liverpool at present is free from the disease.

Respectfully,

JOHN F. ANDERSON,  
Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,  
U. S. Marine-Hospital Service.

## FRANCE.

*Tuberculosis—Its prevalence and treatment, especially in France.*

LYONS, FRANCE, November 14, 1901.

SIR: At a former session of the French Parliament, a commission consisting of 32 members was appointed to investigate the subject of pulmonary tuberculosis, its ravages in France, the causes of prevalence, and the progress that has been made toward its cure. The report of this commission, which has just appeared in the Journal Official, treats the subject very elaborately, covering 25 quarto pages of solid minion. I translate in part and condense from it:

Monsieur Amodru, the author of the report, says that 150,000 people die of consumption in France every year. It is among the young, adults, people from 30 to 45 years of age, in the prime of life, who seem to be the special victims of this scourge. Under such circumstances consumption can not be regarded as merely one of the incidents of life; it is a dreadful enemy, which is constantly extending its ravages and daily gaining ground, with no opposition to its contagious action. It can be said that in regard to France, where population is almost at a standstill, it is more than a menace to individuals; it constitutes a real national peril.

\* \* \* \* \*

*Can be cured.*

"If tuberculosis is a disease that is widespread and contagious, it is also a disease that can be avoided and that can be cured.

"No one now questions the truth of this proposition, and it is such fundamental truths that inspire me to set forth the ravages caused by tuberculosis, to make known the means by which it is propagated, and to indicate in a general way the methods to extirpate it."

*In Austria and Germany.*

Tuberculosis has its victims to-day in all countries and in all climates. Professor Leyden, in his lecture on September 7, 1894, at the Congress of Budapest, estimated the annual number of deaths in Germany from consumption at 170,000, 4,500 of which are charged to the single city of Berlin. He concluded that the aggregate deaths in the German Empire were from 1,000,000 to 1,300,000.

Kuty estimates the deaths from consumption in Austria at 35 for every 10,000 inhabitants. In Vienna, where this disease is called the Vienna malady, "Morbus viennensis," the average annual deaths from consumption during the five years from 1889 to 1893 was 8,356.2. For every 1,000 deaths 232 were of consumption. For every 100,000 inhabitants 540 die of consumption. In Hungary the number of consumptives reaches over 400,000. In Budapest, in a population of 492,237, during a period of five years, statistics report 3,179 deaths a year from consumption.

In 12 cities in Italy, the most populous of the kingdom, the average annual number of deaths from consumption is 337 per 100,000 inhabitants.

In England, according to Mr. Loch, there are 150,000 to 200,000 persons sick with consumption and 41,000 deaths every year. In Switzerland, with 2,800,000 population, the number of consumptives reaches 50,000. The average for the three years 1895 to 1897 was 23.8 deaths from tuberculosis per 10,000 individuals. According to Dr. Knopf, of the 4,500,000 population of Portugal 20,000 die from tuberculosis every year.

The following table from the office of the German imperial board of health gives the number of deaths for each 10,000 of population from tuberculosis and pulmonary inflammations in the different nations mentioned:

Countries.	Deaths from—		Countries.	Deaths from—	
	Tuber-cu-losis.	Pulmo-nary in-flam-ma-tion.		Tuber-cu-losis.	Pulmo-nary in-flam-ma-tion.
Russia.....	39.8	42.1	Denmark.....	19.1	23.2
Austria.....	36.2	22.8	Netherlands.....	18.8	40.1
Hungary.....	31.8	24.4	Italy.....	18.7	47.9
France.....	30.2	30.4	Belgium.....	17.6	46.8
Sweden.....	23.1	27.2	Norway.....	17.4	17.6
Germany.....	22.4	26.5	Scotland.....	17.3	31.7
Switzerland.....	20.3	21.8	England.....	18.6	31.5
Ireland.....	20.3	27.7			

*Mortality in French cities and villages.*

Pulmonary morbidity and mortality is very general in France. If it is true, as contended by the imperial board of health of Germany, that

the average duration of the disease is three years, which is rather below than above the truth, we can approximate the number of our people sick with that disease at about 500,000. In our cities having over 50,000 inhabitants the proportion of deaths from consumption and chronic bronchitis is 49.9 for every 10,000.

In cities having from 10,000 to 50,000 inhabitants the proportion is 39.8 per 10,000.

In cities of from 5,000 to 10,000 the proportion is 35.7. In cities less than 5,000 the proportion is 33.8.

Paris is one of the great centers of tuberculosis. From 12,000 to 14,000 consumptives die there annually and the patients number about 40,000.

Many of the consumptives of Paris leave that city before they are far advanced and die in the country or in small towns, at the home of a relative. Some of them have come from the country to Paris where they receive the first taint of consumption and bear the germs back with them to their old homes. If exact figures could be given of the number of persons thus leaving Paris it would materially raise the total number of deaths from that disease which should be charged to that city.

Monsieur Amodru gives elaborate statistical tables of the ravages of the disease in Paris, by wards or arrondissements, showing that the deaths are more numerous in proportion to population among the poor than among the rich. He quotes from the report of the extra parliamentary commission made to the ministry of the interior, that in towns of less than 5,000 inhabitants the number of consumptives increased in proportion as the population is lowered. It is true that this report applies to only 89 towns, insufficient to establish a precise rule. They give merely an indication, but until it is controverted it will remain as a very disquieting indication.

Unfortunately, the observations thus far indicate that the disease is much more prevalent in the country than was supposed. Professor Brouardel, in his report to the extra parliamentary commission, says that this question of the "progressive invasion of the country by tuberculosis has occupied my mind for several years. I have questioned many physicians on the subject, and their observations all tend to the one conclusion of the marked invasion of the country districts of France by this disease."

Dr. Ricochon, in speaking of an epidemic of consumption in a village, attributed its constant increase to the presence of the large barracks filled with soldiers. "Compulsory military service causes the presence in the barracks of a constantly increasing number of consumptives who are sent back yearly to die in their homes. Every one of them may create a center of tuberculosis contagion, all the more dreadful because military tuberculosis seems to be of exaggerated virulence. I could cite many cases of soldiers rejected as unfit who have communicated the disease in so short a time that they lived to see a brother or sister die from it."

In Paris and the department of the Seine, in a given space of time, consumption each year caused 38 times more deaths than varioloid and scarlatina combined, 16 times more than typhoid fever, and 8 times more than diphtheria.

Statistics prove that consumption is increasing in France and Italy and is decreasing in England, Germany, and other countries. Its home is in all countries and it attacks people of all ages, but statistics establish that it is between the ages of 15 and 60 years, that a person is most

exposed to contract it and die from it. Men are more subject to it than women. The statistics of Worsbourg, Prussia, establish the proportion of 35.48 among men and 28.55 among women.

According to the Bertillon statistics the mortality in Paris is the same for the two sexes up to 15 years age. After that the greater increase is among men.

The following are his figures. In 100 deaths, there are—

Years.	Men.	Women.	Years.	Men.	Women.
From 15 to 20 .....	603	402	From 45 to 50 .....	760	282
From 20 to 25.....	603	492	From 50 to 55 .....	672	258
From 25 to 30.....	770	487	From 55 to 60 .....	588	201
From 30 to 35.....	893	475	From 60 to 65.....	500	191
From 35 to 40.....	875	409	From 65 to 70.....	307	121
From 40 to 45.....	862	343	From 70 to 75.....	201	113

During the six years from 1892 to 1897, 29,476 persons died of consumption in Paris—17,006 men and 12,470 women.

Dr. Mingot, in a report presented January 9, 1901, to the minister of the post-office and telegraph, says that among the 71,000 employees of the department the deaths from tuberculosis amount to 40 for every 10,000. For the department of the Seine, Paris, this proportion increased to 62 for every 10,000, while in the general population of Paris the proportion is 49 for every 10,000. One of the great railroad companies reported that out of 40,000 employees, 271 died of consumption in 1896, 257 in 1897. In 1898 the number of employees was 41,000, deaths from consumption, 285.

The following table gives the losses in the army from tuberculosis during the ten years mentioned:

Years.	Per 1,000.			Years.	Per 1,000.		
	Inva- lided.	Deaths.	Total losses.		Inva- lided.	Deaths.	Total losses.
1888 .....	4.30	1.18	5.48	1894 .....	6.55	1.01	7.56
1889 .....	4.94	1.05	5.99	1895 .....	8.34	1.14	9.48
1890 .....	5.70	1.08	6.78	1896 .....	7.34	0.94	8.28
1891 .....	6.10	1.33	7.43	1897 .....	7.84	0.95	8.79
1892 .....	6.55	1.04	7.59	1898 .....	7.13	0.78	8.01
1893 .....	6.33	0.94	7.27				

The number of persons rejected from the army as consumptives increased very materially from 1888 to 1898. It passed from 4.30 per 1,000 to 7.13 per 1,000. The number of deaths from the same cause diminished during that time from 1.18 to 0.88 per 1,000. The total of losses from death and rejection rise from 5.48 to 8.01 per 1,000.

The armies of other countries also pay a heavy tribute to tuberculosis. A table is given which shows that the losses by death or rejection on account of tuberculosis are increasing in all the armies of Europe except that of England, where the mortality from consumption is diminishing.

Dr. Vincent affirms that of all diseases it is tuberculosis which causes the greatest ravages in the fleet. Jules Richard says, in 1855: "Tuberculosis moves rapidly on board ships. \* \* \* Nothing is more true, and this is due, in the first place, to the close contact of men with each other which increases the chances of contagion. But fatigue, overwork, the variations of temperature to which the men are exposed in going from one climate to another, are so many causes which explain the rapid development of consumption in the marine service."

From 1888 to 1897, the statistics of the marine hospital at Brest report 1,119 deaths, of which 501, 46.8 per 100—that is to say, almost half, were from consumption. In 1898, for the 5 marine hospitals in the ports of Brest, Cherbourg, Lorient, Rochefort, and Toulon, the statistics report 35.5 per 100 deaths from consumption.

In 1898 the total number of deaths in our fleet rose to 2,176. Of this number 635—that is, more than one-quarter—were from consumption.

The army, the marine, and the railroads are not the only conglomerations where tuberculosis develops readily. Professor Brouardel says that wherever a man in his work, in the pursuit of pleasure, or while sick, is compelled to live part or all of the time among other people where habitations are overcrowded or even unhealthy the conditions necessary for imparting the disease exist. If he is well, his companions are a danger to him; if sick, he is a danger to them. The conditions of modern society oblige men to live together. As a child, he is exposed in school; as an adult, in the barracks; a workingman, in the workshops; as a student, in the schools, libraries, and laboratories. If he travels, he is exposed in carriages, railroad cars—too often dirty—in the hotel, where patients have often preceded him and insufficient pains have been taken to protect the new guest from possible contagion. Poor and sick he enters a hospital, where all the environment menaces him. This peril from the crowding of people together is inherent in the very progress of civilization. It is the tribute we pay, and it explains the constantly increasing menace of tuberculosis.

The following are a number of places which may become centers for breeding tuberculosis: Lyceums, colleges, and all kinds of schools; post-offices, courts, prisons, factories, hospitals and asylums, railroads, street cars, hacks, boats, stores, theaters and concert halls, churches, libraries, convents, monasteries, restaurants, and saloons.

It was in 1865 that Villemain, in a celebrated letter to the Academy of Medicine, first declared that tuberculosis was contagious. The power of resistance of the tuberculosis bacilli is very great. After heating them three hours at a hundred degrees they were found to still retain all of their virulence. Moist heat, sunlight, and fresh air are the best known agents for the destruction of the bacilli. Savinski, after many experiments with tuberculosis sputum, concluded "that these expectorations could retain their virulence indefinitely while they remained in darkness, but that they lost it when exposed to the action of sunlight." Other authorities are here quoted in the support of the sunlight cure.

It is not the breath of the consumptive which is contagious; the air which he expels does not contain the germs; it is the spittle, dried and reduced to dust, which is generally the agent of contagion. This dust, coming from the dried spittle and in which there are thousands of bacilli, arises in the atmosphere, enters the respiratory organs, infecting the bronchial tubes and the lungs. Heller calculates that the bacilli expelled by a consumptive in one day number not less 7,200,000,000.

The writer cites a number of cases of the disease caused by inhaling the bacilli expelled from consumptives.

Hipollyte Martin has made many interesting experiments, in which he reports the inoculating of guinea pigs and rabbits with milk bought here and there in Paris. Since the discoveries of Dr. Koch there is no essential feature of the tubercle bacilli with which we are not familiar, and so widespread and numerous have been the experiments regarding its vitality and its resistance of physical and chemical agencies that it is now thoroughly understood.

*The consumptive's breath not contagious.*

All agree that the air expelled by the patient does not contain the bacilli and that it is the same in regard to the physiological secretions. Only the spittle is dangerous, and even there the liquid must be dried, so that the bacilli can float in the air in the form of dust. It is demonstrated also that this dried spittle clings to the wall, the furniture, and the floor of the patient's room for months and even years. It is shown on the contrary that sunlight very speedily, in a few hours in fact, destroys the bacilli. It is also demonstrated that consumption is contracted through the respiratory organs, but also and much less often by milk, and perhaps by meat of consumptive animals.

In short, we know that there is one kind of tuberculosis called "closed," very frequently ganglionary, osseous, and visceral, but in such cases the bacilli are prisoners and consequently inoffensive. Such consumptives offer no danger of contagion. We know also that the consumptive that expectorates the bacilli is dangerous and that we must protect ourselves against him. "Open" tuberculosis is the enemy which must be constantly combatted.

Consumption is by no means necessarily contagious. A healthy man, not predisposed, possesses a power of resistance to the bacilli, a natural immunity, which permits him to escape the contagion.

Although tuberculosis may not be hereditary, it is certain that the children of consumptives, by the mere fact of their birth in a state of organic weakness, are predisposed to the bacilli. In the same manner children and adults who are characterized by what Lorraine and Brouardel call "infantillism" are more subject to consumption than others.

*Alcohol the great ally of consumption.*

General debility, overwork, every kind of excess predisposes one to that disease. The influence of alcohol in developing consumption is denied by no one to-day. All clinicians have recognized this fact, and Professor Landouzy in a résumé of his observations used the picturesque expression, that "alcohol makes the bed for tuberculosis."

Tuberculosis produced by alcohol generally occurs at an advanced age and its progress is very rapid. Of 252 patients suffering from pulmonary tuberculosis Jacquet found 180 caused by alcohol. Mr. de Lavarenne, in his report to the extra parliamentary health commission, after having demonstrated that the deaths from consumption are increasing in France, proved that the increased mortality is in exact proportion to the increased consumption of alcohol.

The departments which are the greatest centers for tuberculosis are almost always those where there is the greatest consumption of alcohol. It is, therefore, of the first importance in the war against consumption to also combat drunkenness. Consumption is avoidable. Brouardel says that if a person is predisposed to it from birth, he may escape it by living in a healthful locality, in an apartment exposed to air and sunshine. On the contrary a strong and vigorous man with no hereditary or acquired predisposition may not escape the contagion if he lives in unhealthful surroundings. It is in dark, closely packed abodes that this disease is cultivated.

*To prevent the spread of the disease.*

It should be thoroughly understood that the spread of this disease can be prevented. People must be prohibited from spitting on floors and the dried dust from expectoration must be rendered harmless. It has been proposed that the act of expectorating upon the ground or

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floors anywhere should be made a crime and punishable as such. Without going so far, for it seems to us it would be very difficult to prevent spitting in the street, it would suffice to confine the prohibition to buildings under the control of the State, depots, museums, etc. "We should recall that this prohibition exists in America and has never called forth much criticism. Kopf reports that a few years ago in San Francisco a well-known millionaire, Mr. B., was condemned to twenty-four hours in prison for violating the law."

Another precaution is profuse sprinkling before sweeping. This should apply to streets and sidewalks as well as to the interior of houses. Houses and the apartments of consumptives should be thoroughly cleaned and ventilated after the departure of the patient.

In its general conclusions the report recommends "careful inspection of meat and milk, the organization of a veritable crusade against tuberculosis in the barracks."

The prohibition of the use of alcohol among soldiers; a ration of 360 grammes of meat daily; the placing of large hygienic spittoons everywhere, raised three feet from the ground, and improved ventilation. The use of metallic spittoons containing an antiseptic solution is recommended and the floors well sprinkled before being swept. These recommendations also apply to the marine with the addition that all consumptives should be kept isolated. The use of disinfected metallic spittoons and the recommendation in regard to sweeping applies to all public buildings, depots, saloons, schools, places of amusement, etc.

*Consumption is curable.*

The report declares that consumption is curable at all stages. Professor Bouchard is quoted as saying "this disease, which is cruel to mankind, is curable in the greater number of cases. All medical action should be constantly inspired on the belief that the disease is curable. The contrary idea is nothing more than a historical souvenir."

Mr. Darenberg says, that "during the last ten years I have cured a number of consumptives, who have resumed their active occupations, have married, and now have healthy children. I can even say," says he, "that I, myself, am the consumptive that I know the best whom I have cured. I am therefore able to confirm that consumption is curable."

Pure air, such as is found on the sea shore and on high mountains, is the best remedy for consumption. That air, free from microorganisms, dust, and smoke, the numerous adulterations engendered by human activity, far from the industrial centers and the numerous fermentations of decaying substances in large cities, contains all the necessary anti-septic qualities. However, in order that this remedy should be effective, this pulmonary septic should be continuous—that is to say, that the patient should not only keep his windows and doors open night and day, but that he should persevere in this air cure for a long time.

He should have plenty to eat and eat often, and should enjoy absolute physical and mental repose. Sanatoriums for consumptives should be constructed in a place sheltered from unfavorable winds, in a healthy locality, in the neighborhood of pure water, where the air is free from dust and poisonous emanations, in an isolated spot at a good distance from any large population, if possible, on the southern slope of a wooded hill or mountain where the summit of the hill and neighboring trees protect it from strong winds.

Respectfully,

JOHN C. COVERT,  
*United States Consul.*

Hon. ASSISTANT SECRETARY OF STATE.